

# The Economics of Water Quality Protection

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# Foundation Principles

We live and earn our livings in communities.

Our ability to enjoy healthy, happy lives is enhanced when we live in healthy, happy communities.



# Foundation Principles

Our neighbors' well-being and future generations' well-being matter.



Positive relationships within our communities are preferable to negative relationships within our communities.



# Foundation Principles

Protecting water quality generates environmental and natural resource benefits that improve the quality of life for the community downstream.



# Market and Non-market Benefits and Costs

Some benefits and costs associated with water quality protection are traded in existing markets.

When water quality is degraded upstream, costs for water treatment downstream go up. The opposite is also true.





# Market and Non-market Benefits and Costs



Other benefits and costs could not be traded in any known market system.

The positive experience of walking along a beautiful stream is a non-market good.

# Market and Non-market Benefits and Costs

As water quality improves, and as secondary effects occur (such as increased wildlife), the aesthetic value of the riparian experience also improves.





# Market and Non-market Benefits and Costs



Some benefits and costs can be measured in dollars by using “proxy” market values.

If home values go up due to a healthier stream corridor, the increase in home prices represents some of the value of the clean, healthy stream.



# Comprehensive Economic Analysis

Some analysts are uncomfortable with including non-market benefits and costs in an economic evaluation; but including them is an important part of deciding whether a project should be completed.



# Comprehensive Economic Analysis



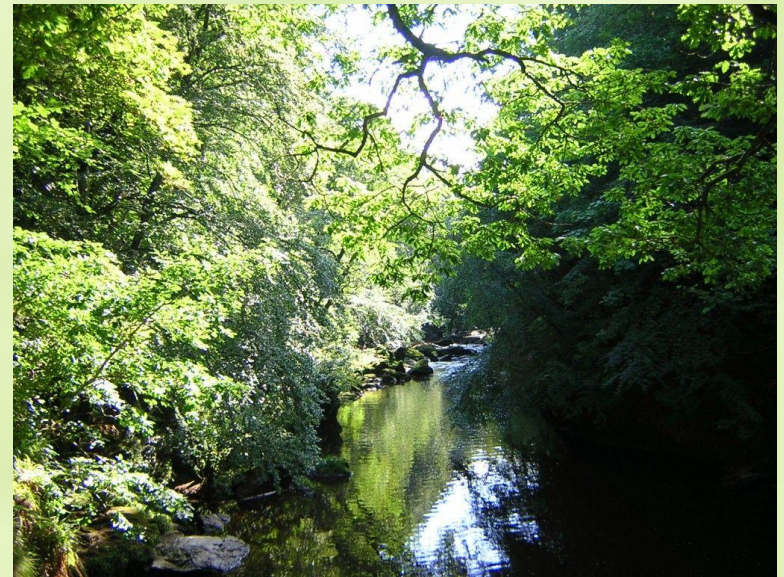
The primary focus of economics is ***not*** the flow of money.

In its truest form, economics is the study of how resources of all kinds—both physical and financial—are allocated.

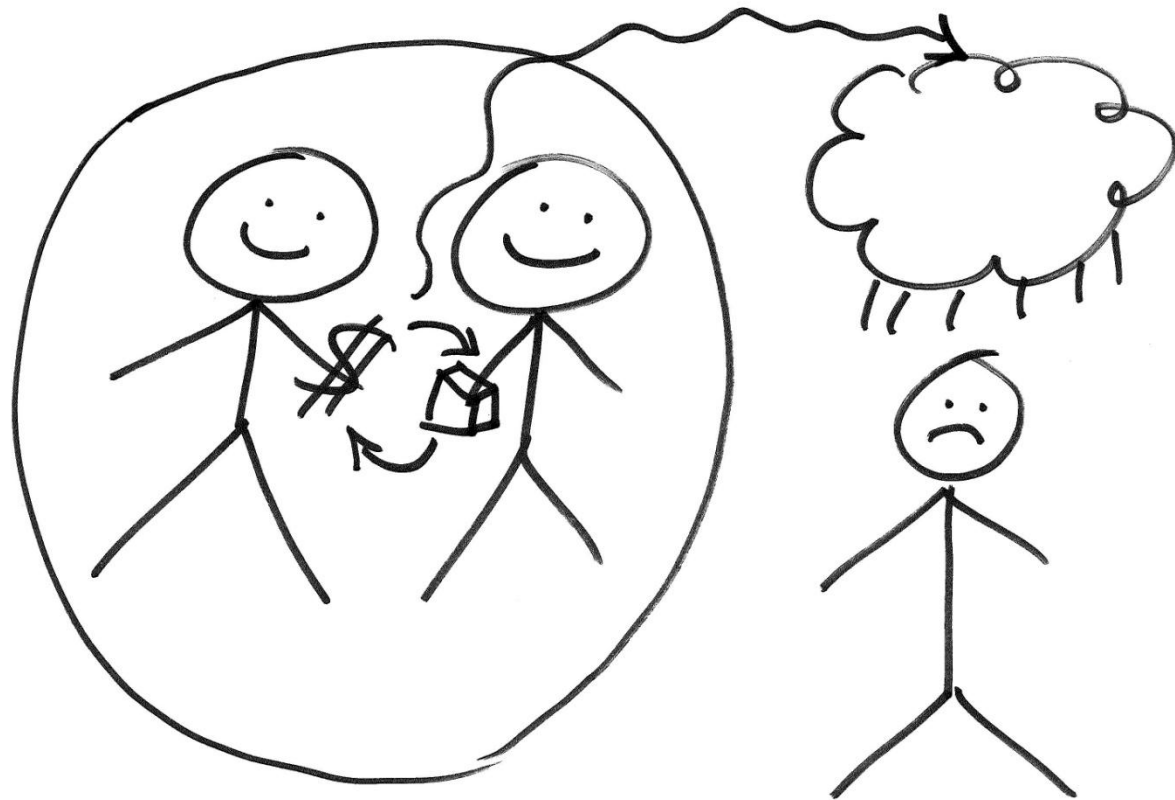


# Comprehensive Economic Analysis

A comprehensive natural resource economics analysis includes *all* benefits and costs; market and non-market, public and private.



# Externalities





# Externalities

Negative externalities should be internalized so people who aren't part of the related market transaction don't have to pay costs of a transaction in which they have not chosen to participate.



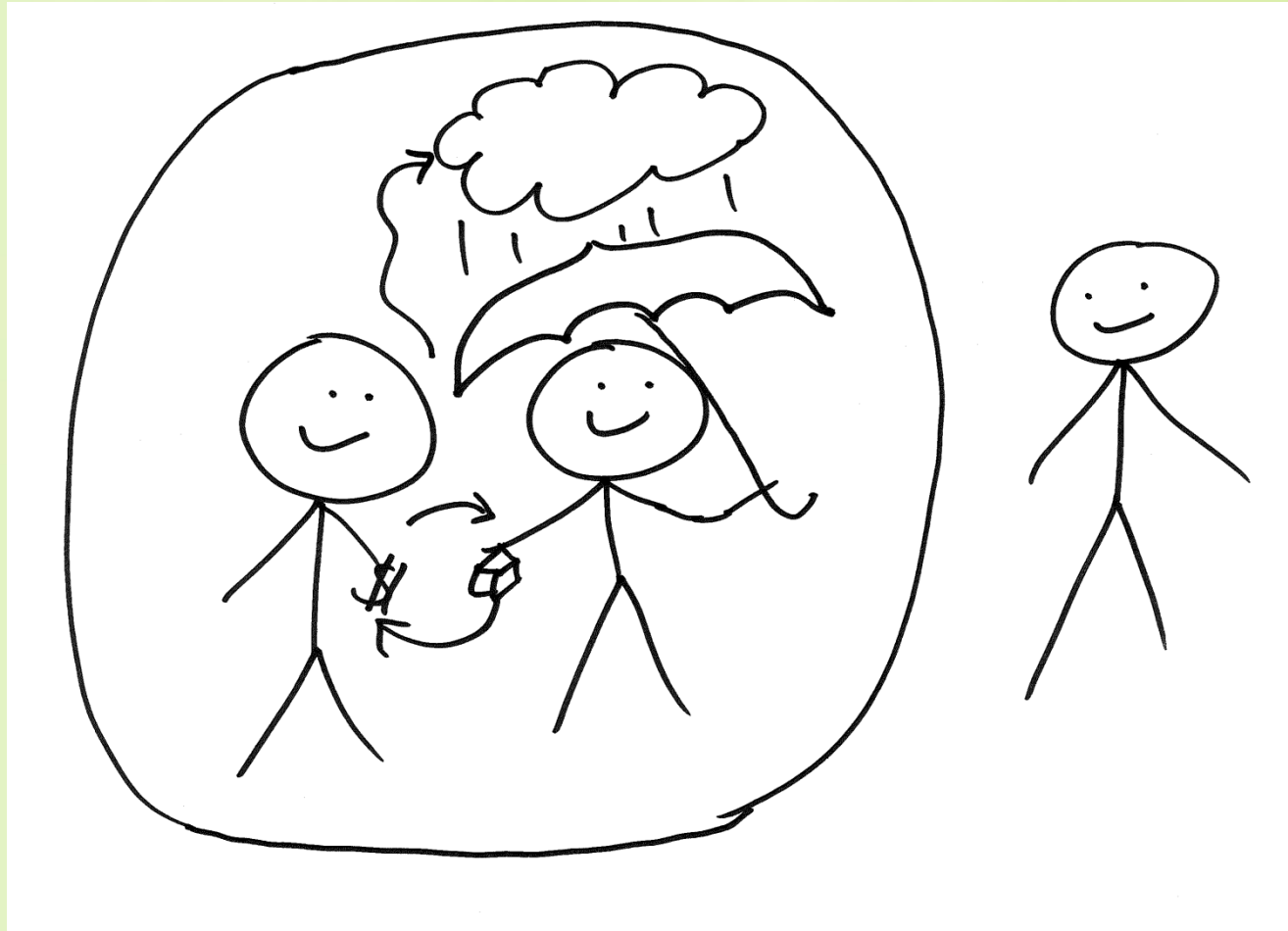
Klamath River Fish Kill  
Photo credit: Yurok Tribe

# Externalities





# Externalities



# Externalities

Positive externalities often should be internalized if their existence reduces productivity or decreases the incentive to innovate.




If they don't negatively affect a business or private land owner, positive externalities can be left in place to increase the overall well-being of the community.



# Public Goods

	Rival	Non-rival
Excludable	<b>Private Goods</b> Food, Clothing, Houses, Cars, Financial Assets	<b>Club Goods</b> Cable and Satellite TV, Satellite Radio
Non-excludable	<b>Open-Access Goods</b> Ocean-going Fisheries, Some Clean Water, Congested Public Roads, Public Lands, Some Private Lands	<b>Public Goods</b> Street Lights, Broadcast Radio and TV, National Defense, Public Knowledge, Clean Air, Some Clean Water



# Success Stories

- New York City Watershed
- Snyderville Basin/East Canyon Earmark
- UACD/NRCS Watershed Planning
- Utah's AFO/CAFO Strategy
- Chalk Creek Watershed
- Snake Creek Canyon
- Rees Creek/Echo Canyon

# Success Stories



- Costs prevented: \$6 - \$10 billion in water treatment plant construction costs
- Fewer chemicals required to treat water in existing treatment plants
- Health-harming by-products from chemical treatments eliminated from city water systems
- Reduction of damage from excess chlorine to pipe fittings within the water delivery system



# Success Stories

Snyderville Basin/East Canyon Project: A combined effort between NRCS, the Kamas Valley Conservation District, and DWQ. NRCS provided \$450,000, DWQ (through ARRA) contributed about \$350,000, the Conservation District had a grant for \$75,000 for land treatment, and the DWQ/EPA 319 program an additional \$100,000.



# Success Stories

## Utah's AFO/CAFO Strategy

UACD/NRCS/DWQ:

- 319, ARDL, and EQIP Funds
- \$15 million spent to remove nutrients from waterbodies statewide





# Questions?

